

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 9449

11 OCT 1934

Received at London Office

Date of writing Report 8 October 34 When handed in at Local Office 10

Port of Copenhagen

No. in Survey held at Reg. Book.

Date, First Survey 14 October 1933 Last Survey 27 September 1934

Number of Visits

89610 on the Single Screw vessel

HÖEGH MERCHANT

Tons Gross 4857.75 Net 2920.62

Built at Copenhagen

By whom built Main's Maskin- & Skibsbuget

Yard No. 582 When built 1934

Engines made at Copenhagen

By whom made Main's Maskin- & Skibsbuget

Engine No. 2247 When made 1934

Donkey Boilers made at Copenhagen

By whom made Main's Maskin- & Skibsbuget

Boiler No. 1876 When made 1934

Brake Horse Power 3400

Owners Partskiden ved Lipp Høegh

Port belonging to Oslo

Nom. Horse Power as per Rule 646

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

Trade for which vessel is intended Ocean going service

L. ENGINES, &c.—Type of Engines Heavy oil engine, vertical, overhead type 2 or 4 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 450 7/8 Length of stroke 1200 7/8 No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 7.0 kg/cm²

Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge 690 7/8 Is there a bearing between each crank Yes

Revolutions per minute 115 Flywheel dia. 1902 7/8 Weight 1180 kg Means of ignition Compression Kind of fuel used Crude oil 150°F

Crank Shaft, dia. of journals as per Rule 357.2 7/8 as fitted 360 7/8 CENTR HOLE 115 7/8 Crank pin dia. 360 7/8 CENTR HOLE 115 7/8 Crank Webs Mid. length breadth 720 7/8 Mid. length thickness 205 7/8 Thickness parallel to axis 225 7/8 Thickness around eyehole 175 7/8

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 332.7 7/8 as fitted 335 7/8 Thrust Shaft, diameter at collars as per Rule 349.3 7/8 as fitted 360 7/8

Propeller Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 368.3 7/8 as fitted 380 7/8 Is the tube screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 18.9 7/8 as fitted 21 7/8 Thickness between bushes as per Rule 14.1 7/8 as fitted 15.0 7/8 Is the after end of the liner made watertight in the

propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner The liner is one length

the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

two liners are fitted, is the shaft lapped or protected between the liners Is an approved Oil Gland or other appliance fitted at the after end of the tube

Yes No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1727 7/8

Propeller, dia. 16'-9" Pitch 10'-3" No. of blades 4 Material Bronze whether Moveable No Total Developed Surface 88 sq. feet

Method of reversing Engines direct reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

forced Thickness of cylinder liners 34 7/8 Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine led to the funnel

Boiling Water Pumps, No. 2 off centrifugal-130 Ton each the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Large Pumps worked from the Main Engines, No. 2 off Diameter 160 7/8 Stroke 250 7/8 Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and Size 1 off 150 Ton ballast pump 2 off 26 Ton each indep. bilge pumps 2 off 48 Ton each eng. bilge pumps

How driven by electro-motor by electro-motor by main engine

the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements

Ballast Pumps, No. and size 1 off 150 Ton plunger Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 off 10 Ton each circulating pumps

Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces 4 off 3" - 2 off 4" - 1 off 7" In Pump Room

Holds, &c. 2 off 3" - 2 off 3 1/2" - 2 off 3 1/2" - 2 off 3" - 2 off 3" - 1 off 3"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 off 3" - 2 off 4" - 1 off 6" - 1 off 7"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

Are all Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Valves except boiler blow off

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges above or below the deep water line above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes pass through the bunkers None How are they protected

What pipes pass through the deep tanks None Have they been tested as per Rule

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

apartment to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from upper deck

Is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 3 No. of stages 2 Diameters 280 7/8-250 7/8 Stroke 190 7/8 Driven by Main engine

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 100 7/8-45 7/8 Stroke 100 7/8 Driven by Main engine

Exhausting Air Pumps, No. 2 off rotary Diameter 129 1/4 MIN ER Stroke 220 7/8 dia. x 370 7/8 stroke

Auxiliary Engines crank shafts, diameter as per Rule 130 7/8 as fitted 150 7/8 2 off 2 cylinder 2 off 280 7/8 dia. x 370 7/8 stroke 320 Rev. per min

AIR RECEIVERS.—Is each receiver, which can be isolated, fitted with a safety valve as per Rule. *Yes*
Can the internal surfaces of the receivers be examined and cleaned. *Yes* Is a drain fitted at the lowest part of each receiver. *Yes*
High Pressure Air Receivers, No. *1* Cubic capacity of each *100* litres Internal diameter *305* mm thickness *6.5* mm
Seamless, lap welded or riveted longitudinal joint *Seamless* Material *S. M. Steel* Range of tensile strength *29.26* Tons Working pressure *32.2* kg/cm
Starting Air Receivers, No. *2* Total cubic capacity *2 x 350 = 700* cubic feet Internal diameter *6.0* inches thickness *3.2* inches
Seamless, lap welded or riveted longitudinal joint *Seamless* Material *S. M. Steel* Range of tensile strength *28.2-28.6* Tons Working pressure *25* kg/cm
IS A DONKEY BOILER FITTED? *Yes* If so, is a report now forwarded? *Yes*
Is the donkey boiler intended to be used for domestic purposes only. *Yes*
PLANS. Are approved plans forwarded herewith for Shifting. *Yes* Receivers *Yes* Separate Tanks. *Yes*
Donkey Boilers. *Yes* General Pumping Arrangements. *Yes* Oil Fuel Burning Arrangements. *Yes*
SPARE GEAR.
Has the spare gear required by the Rules been supplied. *Yes*
State the principal additional spare gear supplied. *There are accompanying list.*

AKTIESELSKABET
BURMEISTER & WAIN'S MASKIN- OG SKIBBYGGERI
Manufacturer.
Dates of Survey while building
During progress of work in shops. 1933- Oct. 14-23 Nov. 28-30 Dec. 14-22 1934- Jan. 5-6-9-11-15-17-22-23-25-30-31 Feb. 2-5-7-12-14-19-20-24-26 March 7-23
During erection on board vessel. May 24-25-26-28 June 1-6-8-15-16-18-19-26-28 July 2-3-5-6-7-16-19-21-22-25-30 Aug. 7-9-13-22-25-28-29-31
Total No. of visits *97*
Dates of Examination of principal parts—Cylinders *5/2-7/2-23/3* Covers *23/1-23/2-23/3* Pistons *14/1-14/2-14/3* Rods *17/1-17/2-17/3* Connecting rods *14/1-14/2-14/3*
Crank shafts *23/1-23/2-23/3* Flywheel shaft *23/1-23/2-23/3* Thrust shaft *23/1-23/2-23/3* Intermediate shafts *23/1-23/2-23/3* Tube shaft *23/1-23/2-23/3*
Screw shaft *23/1-23/2-23/3* Propeller *1/1-1/2-1/3* Stern tube *23/1-23/2-23/3* Engine seatings *23/1-23/2-23/3* Engines holding down bolts *23/1-23/2-23/3*
Completion of fitting sea connections *23/1-23/2-23/3* Completion of pumping arrangements *23/1-23/2-23/3* Engines tried under working conditions *23/1-23/2-23/3*
Crank shaft, Material *Human S. M. Steel* Identification Mark *7.3.34* Flywheel shaft, Material *Human S. M. Steel* Identification Mark *7.3.34*
Thrust shaft, Material *Human S. M. Steel* Identification Mark *7.3.34* Intermediate shafts, Material *Human S. M. Steel* Identification Mark *7.3.34*
Tube shaft, Material *Human S. M. Steel* Identification Mark *7.3.34* Screw shaft, Material *Human S. M. Steel* Identification Mark *7.3.34*
Is the flash point of the oil to be used over 150° F. *Yes*
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with. *Yes*
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. *Yes* (in duplicate) If so, have the requirements of the Rules been complied with. *Yes*
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with. *Yes*
Is this machinery duplicate of a previous case. *No* If so, state name of vessel. *Yes*
General Remarks (State quality of workmanship, opinions as to class, etc.) *The machinery has been built and installed on board under Special Survey and in accordance with the Society's Rules, the approved plans and the requirements contained in the Secretary's letter E dated 5/12-9/12-23/12-1933-13/3-28/7-30/6-1934.*
The material used has been examined and tested as required by the Rules either by us or as per certificate produced and found good, the dimensions are as specified and the workmanship is good.
On completion of the installation the machinery was tested under full power working conditions and found to work satisfactorily and the manœuvring was tested and found good.
On the measured mile the average speed under full power was 14.3 knots I.H.P. 440.
*Recommend the vessel's machinery to have notation of *OLMC-9.34* OIL EN.*
An interim certificate has been issued as per copy enclosed.

The amount of Entry Fee *£ 134.40* When applied for, *10.10.1934*
Special *£ 240.52*
Donkey Boiler Fee *£ 50.00* When received, *2.12.1934*
STARTING AIR RECEIVERS *£ 188.16*
Travelling Expenses (if any) *£ 9.50*
Committee's Minute *FRI. 26 OCT 1934*
Assigned *+ Lmb 9.34 D.R. 90th*
Engineer Surveyor to Lloyd's Register of Shipping.

Rpt. 9a. 11 OCT 4
Port of *Copenhagen* Continuation of Report No. *7449* dated *8. October 1934* on the

Steel Single Screw Motor Vessel HÖEGH MERCHANT

List of the auxiliary machinery

2 centrifugal cooling water pumps, 130 Tons/hour each
2 rotary lubricating oil pumps, 110 " " "
1 duplex ballast pump, 150 " " " diameter of cylinders = 220 7/8, Stroke 250 7/8.
2 bilge and sanitary pumps, 26 " " " diameter of cyl 200 7/8, Stroke 200 7/8.
1 Cog wheel oil fuel transfer pump, 30 Tons per hour.
1 rotary (Tow) deep tank cargo oil pump, 50 Tons per hour.

Two 2-cylinder and one 1-cylinder 2 S.P.S. heavy oil engines with solid injection 220 7/8 cylinder diam x 370 7/8 stroke x 320 revolutions per minute each working respectively a 66 kwts and a 33 kwts compound wound dynamo giving current at 220 Volts pressure for the following purposes

2 off 40 H.P. shunt wound electromotor for the lubricating oil & cooling water.
1 " 20 " " " " " ballast pump
1 " 10 " " " " " bilge & sanitary pumps
1 " 10 " " " " " oil fuel transfer pump
1 " 15 " compound " " " deep tank cargo oil pump
1 " 8 " serie " " " engine burning gear
1 " 3 " shunt " " " turning lathe
1 " 1 " " " " " drilling machine
1 " 0.33 " compound " " " grinding " "
1 " 2.5 " shunt " " " lubricating oil purifier
1 " 2.5 " " " " fuel oil purifier
1 " 2.5 " " " " spare purifier
2 " 2 " " " " pumps circulating cooling oil (fuel oil) through the fuel inject. valves
1 " 5 " " " " 413 compound for the purifier
1 " 0.2 " serie " " " gallery
1 " 48 " compound " " " windlass
9 " 25 " " " " hauling winch & 3-Tons winches
2 " 33 " " " " 5 Tons winches
1 " 14 " " " " electro hydr. steering gear.
3 " 15 kwts heaters for fuel oil and lubricating oil
1 " 6 " " " " fresh water
and current for the whole electric light installation

Further a 5 kwts auxiliary light generator 220 Volts x 23 amps at 800 Revolutions per min driven by a 9 H.P. 3 cyl. paraffin oil engine placed in port side of the deck house, has been fitted and connected to the distribution board for light.

The above is a correct description

AKTIESELSKABET
BURMEISTER & WAIN'S MASKIN- OG SKIBBYGGERI

